WARREN D. WILLIAMS
General Manager-Chief Engineer

1995 MARKET STREET
RIVERSIDE, CA 92501
951.955.1200
FAX 951.788.9965
www.rcflood.org
140149

RIVERSIDE COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

August 11, 2011

Federal Communication Commission
http://fjallfoss.fcc.gov/ecfs/upload/display?z=1zjy1

Ladies and Gentlemen:

Re: LightSquared's Potential Degradation of the GPS Signal

As the General Manager-Chief Engineer of Riverside County Flood Control and Water Conservation District, an agency that is extremely dependent upon high-precision GPS equipment to plan, design and construct the major drainage infrastructure for Riverside County, I must express serious concerns regarding the Federal Communication Commissions (FCC) granting LightSquared, LLC conditional approval to build a nationwide 4G-LTE wireless broadband network (FCC File No. SAT-MOD-20101118-00239). Early testing by GPS technology leaders, Garmin and Trimble Navigation, demonstrated that LightSquared's technology would likely interfere with Global Positioning System (GPS) receivers, degrading their performance in the best case scenario and completely jamming GPS receivers in the worst case scenario.

The Department of Defense, FAA, DHS, NASA, DOI, DOT, DOC, and the Professional Land Surveying and Engineering professions, have all expressed serious reservations in regards to this plan by LightSquared, LLC to build 40,000 ground stations in the United States that could cause widespread interference to GPS signals. This network of ground stations will transmit signals within the L-band frequency immediately adjacent to the GPS L1 frequency at more than one billion times the strength of the low-power GPS signal from space. Furthermore, each mobile phone using LightSquared's wireless service would potentially become a portable GPS jamming device by jamming GPS receivers in its immediate vicinity.

High-precision GPS equipment used by Land Surveyors, Civil Engineers, farmers and other geomatics professionals costing thousands of dollars per receiver would be more adversely affected than the consumer GPS devices given their inherent design. Literally, tens of thousands of high-precision GPS receivers are used in the United States. GPS technology has transformed the way we build and manage our infrastructure, adding a tremendous level of efficiency to the design, construction and maintenance of roads, bridges, commercial properties, residential subdivisions, parks, farms, golf courses, etc.

In California alone, over 4,000 licensed Professional Land Surveyors and 68,000 licensed Engineers use high-precision GPS equipment in their everyday field work. GPS has become an essential tool for design professionals and it is imperative that these GPS signals are not jeopardized by broadband technology.

Here at the Riverside County Flood Control and Water Conservation District we utilize GPS technology from the planning process all the way through to construction staking. We start off using GPS for the geodetic control for mapping of watershed areas to develop the Master Drainage Plan (MDP), this is where the initial planning takes place and the future infrastructure is planned. The mapping of the MDP is done utilizing airborne GPS to precisely position the aircraft which reduces the amount of ground control needed. Once it is determined to build a flood control facility, the project site is mapped at a very high level of detail, again using GPS for the geodetic framework. Once the project is designed, our surveyors use GPS to do the construction staking. As you can see, precise GPS technology is used every step of the way. If this technology is compromised the financial impact would be tremendous.

The FCC must make clear, and the National Telecommunications and Information Administration must ensure, that LightSquared's license modification is contingent on the outcome of the mandated study unequivocally demonstrating that there is no interference to GPS. The study must be comprehensive, objective, and based on correct assumptions about existing GPS uses rather than theoretical possibilities. Given the substantial pre-existing investment in GPS systems and infrastructure and the critical nature of GPS applications, the results of the study must conclusively demonstrate there is no risk of interference. If there is conflicting evidence, any doubts must be resolved concerning the LightSquared terrestrial system.

This situation has the potential of becoming a tremendous public safety issue and an economical disaster not only for California, but for the United States as a whole. I urge the Federal Communication Commission to protect our Global Positioning System.

Very truly yours,

WARREN D. WILLIAMS
General Manager-Chief Engineer

JM:rlp